

ANDREYEVA, A., inzh.

Steps for locating and eliminating faults in the vertical sweep
stage. Radio no.10:48-50 0 '62. (MIRA 15:10)

(Television—Repairing)

ANDREYEVA, A., inzh.

Faults in the vertical sweep stage. Radio no. 11:47-49
N '62. (MIRA 15:12)
(Television—Repairing)

ANDREYEVA, A., inzh.

Faults which cause instability in the image. Radio no.3:37-39
Mr '63. (MIRA 16:2)

(Television--Maintenance and repair)

ANDREYEVA, A., inzh.

Faults of television receivers causing image instability.
Radio no.4:24-25,27 Ap '63. (MIRA 1613)
(Television—Receivers and reception)

KHARITONOV, Gennadiy Nikolayevich; ANDREYEVA, Anna Aleksandrovna;
PEYCH, N.N., red.

[Chamber drying of export lumber] Kamernaya sushka eksport-
nykh pilomaterialov. Moskva, Lesnaya promyshlennost',
1965. 48 p. (MIRA 18:9)

NAUMOV, Ye.M.; ANDREYEVA, A.A.

Soils of slopes with steppe characteristics in the Yana-Indigirka Upland;
taiga-steppe soils in the extracontinental regions of the northeastern
U.S.S.R. Pochvovedenie no.3:62-70 Mr '63. (MIRA 16:3)

1. Pochvennyy institut imeni V.V.Dokuchayeva.
(Yana Valley--Soils) (Indigirka Valley--Soils)

L 02349-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6025737

SOURCE CODE: UJ/0058/66/000/004/A069/A069

AUTHOR: Kravchenko, V. S.; Andreyeva, A. A.; Kuznetsov, F. A.

58
B H

TITLE: Influence of substrate finishing conditions on the quality of epitaxial film of germanium in the chloride method

SOURCE: Ref. Zh. Fizika, Abs. 4A585

REF SOURCE: Sb. Simpozium. Protsessy sinteza i rosta kristallov i plenok poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 1965, 15-16

TOPIC TAGS: germanium, epitaxial growing, semiconducting film, surface finishing

ABSTRACT: An investigation was made of the influence of the preparatory operations prior to growing on the perfection of epitaxial germanium films. The perfection of the films was investigated as a function of the conditions for finishing the substrates of Ge in hydrogen and for etching the latter in a mixture of dry hydrogen chloride with hydrogen. It is found that when the substrates are treated in hydrogen at 850C, the optimal treatment time is 40 minutes. When the substrates are polished by etching with a mixture of hydrogen chloride and hydrogen, mirror-smooth films containing no stacking faults are obtained. [Translation of abstract]

SUB CODE: 20

Card

1/1

hfh

Disintegration of the behavior of ZrO_2 and of its crystalline systems with CaO and MgO . K. Keler and A. B. Chudakov, *High Temperature Materials Science*, 1967, 1, 25-27 (1967). Pure ZrO_2 twice heated at 1100° has a rather small temp. (about 1000°) of maximum expansion, whereas on differential dilatometric curves, as well in heating as in cooling cycles. A thermal annealing of ZrO_2 at $1100-1200^\circ$ after its first heating to a high temp. stabilizes to a certain degree the tetragonal modification of ZrO_2 , especially if cooled in H_2O . Cubic crystals of 50 mol. % ZrO_2 and 10% $2CaO$ or CaO fired at $1800-1700^\circ$ disintegrate, particularly during a repeated heating to $1200-1300^\circ$ and subsequent cooling to room temp., in comparison with an uninterrupted heating at these temps. The disintegration of the crystals with MgO and CaO brings about a decrease and a shifting of the maximum temp. to lower temps., an increase in porosity and a reduction of the sp. wt. and of the mech. strength. The x-ray analysis confirms the structural changes in the cooled bodies, and the phase exam. shows that the free oxides are the end products of the disintegration. This process even takes place if there is an excess in the stabilizing substance, e.g. if 50% MgO is present. For an approximation of the units of monoclinic ZrO_2 , a graphic method was devised based on the character of the expansion curves.

W. Blizel

15(2)

AUTHORS:

Keler, E. K., Andreyeva, A. B.

SOV/151-50-12-5/10

TITLE:

The Influence of Admixtures and Additions of Titanium Dioxide Upon the Stabilization Process of Zirconium Dioxide (Vliyaniye primesey i dobavok dvuokisi titana na protsess stabilizatsii dvuokisi tsirkoniya)

PERIODICAL:

Ogneupory, 1950, Nr 12, pp 552 - 558 (USSR)

ABSTRACT:

Commercial zirconium dioxide (Table 1) and chemically pure zirconium dioxide with a ZrO_2 content of 99.6% served as initial material. Carbonates of magnesium and calcium of the "Ch" type served as stabilizing additions. A decrease in shrinkage and an increase in thermal stability were attained by the use of zirconium dioxide, which was burnt up to a temperature of 1700° , whereas the sintering has become worse. Figure 1 shows the linear changes of samples with a content of 90% ZrO_2 + 10% MgO , and figure 2 presents the linear change of ZrO_2 , which was burnt at 1700° , with the characteristic loop of polymorphous transformation. The formation of mixed crystals of ZrO_2

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The Influence of Admixtures and Additions of Titanium Dioxide Upon the Stabilization Process of Zirconium Dioxide SOV/131-58-12-5/10

with calcium oxide at a lower temperature than with magnesium oxide is confirmed also by chemical phase analyses (Table 2). Figure 3 shows the influence which is exercised by 2% TiO_2 upon the stabilization of ZrO_2

in the mixture 90% ZrO_2 + 10% MgO , and that in the mixture 90% ZrO_2 + 10% CaO is given in table 4. Figure 5 shows the linear changes of the samples with a content of 85% ZrO_2 + 15% MgO (mol) at a burning temperature of 1600°. Table 3 presents the chemical phase analysis of samples with pure and commercial ZrO_2 . The experimental results can be seen from table 4. Figure 6 shows the linear changes of the samples with 90% ZrO_2 + 10% MgO after burning at 1700°, and those of the samples with 90% ZrO_2 + 10% CaO after burning at 1700°, are given in figure 7. Besides the dilatometric investigations, also some physical and technical data of the samples - shrinking, porosity, breaking strength at pressure, and others - were determined (Table 5). Conclusions: TiO_2 which is to

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The Influence of Admixtures and Additions of Titanium Dioxide Upon the Stabilization Process of Zirconium Dioxide SOV/131-58-12-5/10

be found in commercial ZrO_2 as an admixture or addition, does not exert a positive effect upon the sintering of zirconium mixtures. Furthermore it decreases the stabilization of ZrO_2 and deteriorates the mechanical properties of the products. TiO_2 exerts a more negative effect in the stabilization by means of magnesium oxide than in the stabilization by means of calcium oxide. A TiO_2 admixture of more than 0.3 - 0.5% is regarded as unsuited for the production of dense and solid highly refractory products from stabilized ZrO_2 . There are 7 figures, 5 tables, and 10 references, 6 of which are Soviet.

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry AS USSR)

Card 3/3

KELER, E.K.; ANDREYEVA, A.B.

Additional data on solid solutions in the ZrO_2-TiO_2 system.
Ogneupory 25 no.7:320-324 '60. (MIRA 13:8)

1. Institut khimii silikatov A.N.SSSR.
(Dielectrics)

87999

S/131/61/000/001/002/004
B021/B058

15.22.0

1142, 1273, 1136

AUTHORS:

Keler, E. K. and Andreyeva, A. B.

TITLE:

Effect of Titanium Dioxide on the Sintering and Stabilization of ZrO_2 in Zirconia-alumina and Spinel-zirconium Compositions

PERIODICAL:

Ogneupory, 1961, No. 1, pp. 25-31

TEXT: A study has been made of the mineralizing effect of titanium dioxide on compositions containing zirconium dioxide as well as magnesium oxide and calcium oxide respectively, besides alumina. The following compositions were examined: with (mol %) $Al_2O_3 = 100$; $Al_2O_3 + ZrO_2 = 90 + 10$; $ZrO_2 + MgO + Al_2O_3 = 33.3 : 33.3 : 33.3$; $ZrO_2 + CaO + Al_2O_3 = 33.3 : 33.3 : 33.3$ with admixtures of up to 4% TiO_2 . In all specimens, TiO_2 improved sintering and reduced the temperature of complete sintering from $1700^\circ C$ to $1500^\circ C$. The physico-technical properties of the fired specimens, their coefficient of linear expansion, phase composition, spinel formation, and chemical

Card 1/3

87999

Effect of Titanium Dioxide on the Sintering
and Stabilization of ZrO_2 in Zirconia-alumina

S/131/61/000/001/002/004
B021/B058

and Spinel-zirconium Compositions

composition as well as their refractoriness were determined. It is stated that an addition of titanium dioxide greatly reduces the sintering temperature of aluminiferous and zirconium-alumina compositions. In a similar way, titanium dioxide affects the sintering of the triple equimolecular mixture $ZrO_2 : MgO : Al_2O_3$. The specimens from 90% Al_2O_3 + 10% ZrO_2 and $ZrO_2 : MgO : Al_2O_3 = 1 : 1 : 1$ have a better thermal stability than those from alumina and zirconium dioxide, which is stabilized by magnesium oxide and calcium oxide, respectively. The coefficient of linear thermal expansion of the equimolecular mixtures $ZrO_2 - MgO - Al_2O_3$ and $ZrO_2 - CaO - Al_2O_3$ is much smaller than that of the corresponding mixtures without alumina. The two-component compositions $Al_2O_3 - ZrO_2$ and three-component compositions $MgO - Al_2O_3 - ZrO_2$ possess high refractoriness, satisfactory thermal stability, and good stability under pressure at high temperatures. They may be used as highly refractory masses. There are 4 figures, 6 tables, and 12 references: 8 Soviet, 2 US, and 2 German.

Card 2/3

15.2670

29720
S/131/61/000/012/002/002
B105/B101

AUTHORS: Keler, E. K., Andrejeva, A. B.

TITLE: Decomposition of calcium zirconate in the presence of some oxides during heating

PERIODICAL: Ogneupory, no. 12, 1961, 581 - 586

TEXT: The authors investigate the thermal resistivity of calcium zirconate as a refractory material in the presence of the oxides of elements of the fourth group and of alumina. For the synthesis of calcium zirconate at 1350, 1500, and 1600°C, they used industrial zirconium dioxide with a content of 98.4% ZrO_2 and calcium carbonate, as well as ZrO_2 , TiO_2 , SiO_2 , ThO_2 , and Al_2O_3 . Specimens from calcium zirconate react at 1350°C in contact with silica and titanium dioxide. Up to 1450°C this reaction did not take place with zirconium dioxide, thorium dioxide, and alumina. Calcium zirconate in an equimolecular mixture with ZrO_2 , SiO_2 , TiO_2 , and Al_2O_3 decomposes during heating up to 1500°C: (1) with SiO_2 into calcium silicate and monoclinic zirconium
Card 1/2

29990

S/131/61/000/012/002/002

B105/B101

Decomposition of calcium...

dioxide; (2) with ZrO_2 into the solid solution $ZrO_2 - CaO$ and some undecomposed zirconate is left; (3) with Al_2O_3 into the solid solution $ZrO_2 - CaO$ and calcium aluminate; (4) with TiO_2 into the triple compound $ZrO_2 \cdot CaO \cdot 2TiO_2$ and a residue of $CaZrO_3$. With ThO_2 , calcium zirconate does not decompose during heating to $1600^\circ C$. There are 6 figures, 4 tables, and 8 references: 5 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: M. K. Hadler, E. C. Fitzsimmons, Journ. Amer. Cer. Soc., 1955, No. 6, p. 214; L. W. Coughanour, R. S. Roth, S. Marzullo, F. E. Sennett, J. of Research N.B.S., 1955, v. 54, No. 4.

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry AS USSR)

Card 2/2

15 2230

3209, 3309, 3009

23968

S/131/61/000/006/001/003
B105/B206

AUTHORS: Keler, E. K., and Andreyeva, A. B.

TITLE: Effect of the admixture of silicon dioxide on the
sintering and stabilization of zirconium dioxide

PERIODICAL: Ogneupory, ²⁶no. 6, 1961, 276-281

TEXT: The effect of silicon dioxide on the behavior of zirconium dioxide during firing is investigated. Pure and commercial zirconium dioxide were used as initial materials. Shrinkage, weight of unit volume, open porosity and physicomachanical properties were investigated for various mixtures, admixtures, and firing temperatures. Table 4 shows the effect of SiO_2 admixtures on the formation of the solid solution ZrO_2 - MgO during firing. The thermal expansion of samples from 90 mole % of ZrO_2 + 10 mole % of CaO is shown graphically for various firing temperatures and admixtures. Fig. 6 shows such curves of thermal expansion for samples from 90 mole % of ZrO_2 + 10 mole % of MgO , fired at $1,500^\circ\text{C}$. It was

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23968

S/131/61/000/006/001/003

B105/B206

Effect of the admixture of silicon ...

established that pure zirconium dioxide sinters much worse than commercial one. Its complete stabilization with an admixture of 10% of MgO is not even obtained during firing of up to 1,700°C. The admixture of silicon dioxide hinders stabilization of zirconium dioxide in solid solution in mixtures of 90 mole % of ZrO_2 + 10 mole % of MgO and 90 mole % of ZrO_2 + 10 mole % of CaO. In the presence of 3-4% of SiO_2 , almost the entire magnesium oxide is bound by silicon dioxide, zirconium dioxide is not stabilized, and the samples become flaky; in the zirconium-calcium mixture the formation of the solid solution proceeds at lower temperature and part of the calcium oxide is bound by zirconium dioxide. An admixture of silicon dioxide is described as being undesirable for the production of highly refractory products from stabilized zirconium dioxide, and its content must be restricted by technical requirements. The silicon-dioxide content in industrial zirconium dioxide should not exceed 1%, nor 0.5% for the manufacture of especially important products. There are 7 figures, 4 tables, and 9 references: 4 Soviet-bloc and 5 non-Soviet-bloc. The reference to the English-language publication reads as follows: Geller and Jaworsky. I. Research. Nat. Bur. Stand. 1945. 35 [1].

Card 2/5

S/131/62/000/004/002/002
B105/B101

15.7730

AUTHORS: Keler, E. K., Andreyeva, A. B.

TITLE: Effect of iron oxide on the sintering of zirconium masses,
and the process for stabilizing zirconium dioxide

PERIODICAL: Ogneupory, no. 4, 1962, 184 - 192

TEXT: The effect of iron oxide on the properties of refractory zirconium products was studied so far as common Fe_2O_3 impurities of commercial zirconium dioxide, and Fe_2O_3 introduced during grinding and burning are concerned. Commercial and pure zirconium dioxide were used as initial materials. Chemical composition of the industrial zirconium dioxide: 98.4% ZrO_2 ; 1.2% TiO_2 ; 0.11% Fe_2O_3 ; 0.08% CaO ; 0.11% SO_4 . Pure zirconium dioxide with 99.7% ZrO_2 content is produced from zirconium sulfate by calcination at 1200°C . Stabilization was brought about by means of MgO or CaO . Iron oxide admixture was found to lower the sintering temperature of zirconium mixtures by $200 - 250^\circ\text{C}$. The elastic moduli of the samples

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Effect of iron

S/111/62/000/004/002/002
B105/B101

stabilized by means of magnesium oxide were found to rise strongly when introducing up to 3% iron oxide and firing at 1400°C, and 1% at 1700°C. Iron oxide may be used as mineralizer for the production of dense zirconium materials when burning at up to 1400°C. At burning temperatures above 1500°C, part of the magnesium oxide, with ZrO_2 , forms a solid solution and stabilizes it partly in cubical form, although the monoclinic structure remains as principal structure. Magnesium ferrite does not react with ZrO_2 below 1400°C. When admixing iron oxide to ZrO_2 - CaO mixtures and synthesized calcium ferrite to ZrO_2 , a solid ZrO_2 - CaO solution is formed at a temperature of up to 1400°C, the X-ray lines of which are shifted in the direction of reduction of the interplanar spacing, as compared to the pure solid solutions. Admixture of iron oxide accelerates decomposition of the solid solutions of ZrO_2 with CaO and MgO. There are 7 figures and 7 tables.

ASSOCIATION: Institut Khimii silikatov AN SSSR (Institute of Silicate Chemistry AS USSR)

Card 2/2

S/131/62/000/007/002/003
B117/B138

AUTHORS: Keler, L. K., Andreyeva, A. B.

TITLE: Investigation of the solid solution range in the ZrO_2 - SiO_2 system

PERIODICAL: Ogneupory, no. 7, 1962, 327-332

TEXT: The presence of solid solutions in the ZrO_2 - SiO_2 system was studied as opinions differ on this problem. The authors used ZrO_2 mixtures containing 3, 5, 10, 15, and 20 mole% of SiO_2 , heated to 1500-2050°C, and zirconium dioxide samples with previously synthesized zirconium ($ZrSiO_4$). X-ray diffraction, (Debye - Scherrer patterns and ionization curves), optical (transmission method with powders in an immersion liquid, with magnification X 750, and reflection method using sections, with X 144), and dilatometric methods showed the same results. There was no shift of the diffraction maxima in the range of large angle scattering, characteristic of such as would indicate the formation of solid solutions. ZrO_2 and SiO_2 did not react when heated to 1500°C. A rise in temperature to 1700-1750°C

Card 1/2

Investigation of the solid ...

S/131/62/000/007/002/003
B117/B138

caused intensive formation of $ZrSiO_4$. Further heating to $2000^{\circ}C$ reduced the weight of the samples and increased their porosity. This may be due to the dissociation of zirconium into ZrO_2 and SiO_2 with evaporation of the latter. Summary: Contrary to N. A. Zhirnova's assertions (Z. anorg. allg. Chem. 1934, 218, 193), no solid phase was found in the ZrC_2 -rich region of the system. This agrees with B. Weber's and K. Schwarz's results (Zer. Deutsch Ker. Ges., 1957, no. 12). There are 6 figures and 5 tables. ✓

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry AS USSR)

Card 2/2

L 10114-63

EWP(q)/EWT(m)/BDS AEDC/AFFTC/ASD JD

ACCESSION NR: AP3000026

S/0131/63/000/005/0224/0231

AUTHOR: Keler, E. K.; Andreyeva, A. B.

TITLE: Formation and properties of solid solutions of zirconium dioxide with
oxides of rare-earth elements 27 27

SOURCE: Ogneupory, no. 5, 1963, 224-231

TOPIC TAGS: refractories, zirconium dioxide, ceric oxide, lanthanum oxide,
yttrium oxide, solid solutions, thermal stability, chemical stability,
porosity, sintering, polymorphic transformations, thermal expansion, structure

TEXT: The formation and properties of solid solutions in the systems ZrO sub 2
-- CeO sub 2, ZrO sub 2 -- Y sub 2 O sub 3, and ZrO sub 2 -- La sub 2 O sub 3
have been studied. Specimens were compacted from mixtures of chemically pure
oxides (70 to 95 or 20 mol % ZrO sub 2 and 30 to 5 or 80 mol % of the second
oxide) under a pressure of 500 kg/cm sup 2, and fired at 1400-1700C. These
specimens were subjected to chemical, x-ray, and dilatometric analyses, and

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L 10114-63

ACCESSION NR: AP3000026

their ceramic, elastic, electrical, and physical properties were studied. At 1400C the above systems form solid solutions with a cubic structure. The porosity of specimens heated at 1400C for 6 hrs is 30 to 40%; sintering occurs on heating to 1700-1750C for 3 hrs. In specimens containing 20 mol % CeO sub 2, 15 mol % Y sub 2 O sub 3, or 25 mol % La sub 2 O sub 3, ZrO sub 2 is fully stabilized by heating to 1700-1750C. Addition of CeO sub 2 or Y sub 2 O sub 3 lowers the temperature of the polymorphic transformation of ZrO sub 2. New highly refractive materials can be obtained by firing to 1750C the solid solutions ZrO sub 2 -- 20% CeO sub 2, ZrO sub 2 -- 80% CeO sub 2, ZrO sub 2 -- 15% Y sub 2 O sub 3, ZrO sub 2 -- 80% Y sub 2 O sub 3, and ZrO sub 2 -- La sub 2 O sub 3. Some of these materials have a lower thermal expansion coefficient and higher thermal stability (at 1200C) than ZrO sub 2 stabilized with CaO or MgO. The highest thermal and chemical stability is exhibited by ZrO sub 2 -- Y sub 2 O sub 3 solid solutions. Orig. art. has: 6 tables and 8 figures.

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of the Chemistry of Silicates AN SSSR)

SUBMITTED: 00

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER 009

Card 2/2

L 10876-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG
ACC NR: AP5025651 SOURCE CODE: UR/0080/65/038/010/2166:2174

AUTHOR: Andreyeva, A. B.; Keler, E. K. 29
23

ORG: none

TITLE: Reactions of lanthanum and neodymium oxides with elements of group II of the periodic table 21

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 10, 1965, 2166-2174

TOPIC TAGS: lanthanum oxide, neodymium compound, alkaline earth oxide, zinc oxide, cadmium compound, powder metal sintering, aluminate

ABSTRACT: Solid state reactions of La_2O_3 and Nd_2O_3 with BeO , MgO , CaO , SrO , BaO , ZnO , and CdO were studied in 1:2 powder mixtures. Mixtures containing Al_2O_3 in the proportion $\text{La}_2\text{O}_3:\text{RO}:\text{Al}_2\text{O}_3 = 1:1:1$ were also sintered. X-ray diffraction, thermographic, chemical phase and microscopic analyses were employed. No chemical compounds or solid solutions were found to form on heating up to 1500° in the two-component systems except in the case of BeO . Sintering of the $\text{Ln}_2\text{O}_3\text{-MeO}$ mixtures occurs at $1400\text{-}1500^\circ$. When kept in air, the samples are unstable and crumble. In the three-component systems, no compounds are formed up to 1650° . The predominant reaction is the formation of lanthanum and neodymium aluminates; the secondary reaction is the formation of spinel-type compounds by the oxides of elements of group II. Spinel, MgAl_2O_4

Card 1/2 UDC: 546.654'657+546.41.5+541.451

L 10876-66

ACC NR: AP5025651

decomposes on heating to 1400-1500° in the presence of La_2O_3 and Nd_2O_3 to form rare earth aluminates. Recommendations are given for improving the porosity of Ln_2O_3 - $\text{RO-Al}_2\text{O}_3$ mixtures. Orig. art. has: 3 figures, 5 tables.

SUB CODE: 07,11

SUBM DATE: 22Aug63/

ORIG REF: 002/

OTH REF: 009

Card 2/2

L 59957-65 EWG(j)/EWP(s)/EWT(m)/EWP(w)/EPF(c)/EWA(d)/EPR/I/EWP(t)/EWP(k)/
EWP(z)/EWP(b)/EWA(c) Pf-4/Pr-4/Ps-4 IJP(c) JD/JG

ACCESSION NR: AP4006932

S/0080/63/036/012/2605/2610

AUTHORS: Andreyeva, A. B.; Keler, E. K.

TITLE: Sintering and the physico-technological properties of lan-
thanum silicates

SOURCE: Zhurnal prikl. khimii, v. 36, no. 12, 1963, 2605-2610

TOPIC TAGS: rare earth silicates lanthanum silicates lanthanum
oxyorthosilicate, lanthanum orthosilicate, lanthanum pyrosilicate,
La sub 2 O sub 3 silica system, La sub 2 O sub 3, lanthanum sili-
cate sintering, lanthanum silicate crucible, mineralizer additive
Ce O sub 2 mineralizer, titanium dioxide mineralizer, alumina
mineralizer, silicate mechanical property, La sub 2 O sub 3 leaching

ABSTRACT: This article specifically investigates sintering of
lanthanum silicates prepared from La_2O_3 (99.7% purity) and SiO_2
("pure") in the proportions 1:1, 1:1.5, 1:2 corresponding to the
existing compounds. Samples were hydraulically compressed (300
 kg/cm^2) and sintered in a kerosene furnace at 1400, 1500 and 1600.
The results show that silicate formation begins at 1400

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L 39957-65

ACCESSION NR: AP4006932

3

without sintering which is attained at 1600-17000 (porosity greater than 20%) during primary calcination. Sintering is obtained only with the addition of a pulverized mineralizer, such as 2-3% CeO_2 after a primary calcination at 15000 after which a secondary calcining at 1600-16500 should follow. The most stable sintered product is lanthanum pyrosilicate ($\text{La}_2\text{O}_3 \cdot 2\text{SiO}_2$). Mixtures of ortho- and orthooxysilicates without additives crumble in the air in a few hours after calcining at 14400 or in a few days after calcining at 16000. Sintering with TiO_2 , Al_2O_3 can stabilize the silicates for several months, and permanently by the addition of 2-3% of CeO_2 . By eliminating the free lanthanum oxide from the once-calcined ground powder by means of ammonium acetate or introducing additional silica (above stoichiometric proportion in primary calcining) the same result is achieved. Orig. art. has: 1 figure, 3 tables

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry, AN SSSR)

Card 2/3

L 39937-65

ACCESSION NR: AP4006852

SUBMITTED: 08Jun62

ENCL: 00

SUB CODE: MM, MT

NO REF SOV: 003

OTHER: 001

Cord 3/3 50

L 16804-66 EWP(e)/EWT(m)/EPF(n)-2/EWP(t) IJP(c) JD/vv/JG/WH

ACC NR: AP6003371

SOURCE CODE: UR/0363/66/002/001/0137/0144

33

AUTHOR: Leonov, A.I.; Andreyeva, A.B.; Keler, E.K.

31

B

ORG: Institute of Silicate Chemistry im. I.V. Grebenshchikov, Academy of Sciences SSSR
(Institut khimii silikatov Akademii nauk SSSR)

TITLE: Effect of gaseous medium on the interaction between zirconium dioxide and cerium oxides

55,27 27 5527
SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 1, 1966, 137-144

TOPIC TAGS: zirconium compound, cerium compound, solid solution

ABSTRACT: The phase relationships in the ZrO_2 - Ce_2O_3 system were studied in a reducing atmosphere. The following characteristics were established: formation of the pyrochlore-type compound $Ce_2Zr_2O_7$, and three solid solutions based on zirconium dioxide - a monoclinic (below 1000C), tetragonal (above 1000C), and cubic solid solution (from 5 to 17 mole % Ce_2O_3), stable at high temperatures; a metastable solid solution based on Ce_2O_3 and a region of immiscibility between the indicated phases were also found. Dilatometric measurements established that in the concentration range from 0 to 27 mole % Ce_2O_3 there is a reversible polymorphic transformation of zirconium

Card 1/2 UDC: 546.831-31+546.655-31

Card 2/2 Mc

ANDREYEVA, A.B.; KELLER, E.K.

Reaction of lanthanum and neodymium oxides with oxides of
group IV elements of the D.I. Mendeleev periodic system.
Zhur. prikl. khim. 38 no.10:2166-2174 0 '65. (MIRA 18:12)

L 24528-66 EWP(e)/EWT(m)/T JD/JG/WH
 ACC NR: AP6011008 (A) SOURCE CODE: UR/0080/66/039/003/0489/0498
 AUTHOR: Andreyeva, A. B.; Keler, E. K.
 ORG: none
 TITLE: Reactions of lanthanum and neodymium oxides with oxides of elements of groups III and IV of the periodic system
 SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 3, 1966, 429-498
 TOPIC TAGS: lanthanum oxide, neodymium oxide, aluminum oxide, yttrium oxide, gallium compound, iron oxide, semiconducting ceramic material, cerium oxide, silicon dioxide, titanium dioxide, zirconium compound, cerium compound, tin compound
 ABSTRACT: The reactions of La_2O_3 and Nd_2O_3 with certain oxides of tri- and tetra-valent elements in the solid state were studied and the principal physicochemical properties of the reaction products were determined. Pressed powder mixtures were prepared in which the molar ratio $\text{Ln}:\text{Me} = 1:1$ and $1:2$, where $\text{Ln} = \text{La}_2\text{O}_3$ and Nd_2O_3 , and $\text{Me} = \text{Al}_2\text{O}_3, \text{Ga}_2\text{O}_3, \text{Fe}_2\text{O}_3, \text{Cr}_2\text{O}_3, \text{Y}_2\text{O}_3, \text{SiO}_2, \text{TiO}_2, \text{ZrO}_2, \text{SnO}_2$, and CeO_2 . The pressed pellets were then sintered at 1350, 1500, and 1700°C, and the products were
 Card 1/2 UDC: 546.654:657+.541.451

L 24528-66

ACC NR: AP6011008

2
examined by x-ray diffraction. La_2O_3 and Nd_2O_3 were found to form pyrochlore-type compounds with TiO_2 , SnO_2 , and ZrO_2 ; perovskite-type compounds with trivalent metal oxides Al_2O_3 , Ga_2O_3 , Cr_2O_3 , and Fe_2O_3 ; and solid solutions in the region of Y_2O_3 and CeO_2 with the latter oxides. It was established that in La_2O_3 - and Nd_2O_3 -base compositions, no stability is imparted to the samples by SiO_2 , TiO_2 , ZrO_2 , SnO_2 , Y_2O_3 , and CeO_2 , taken in the proportion of 1:1 after firing at 1500°C . In compositions in which this proportion is 1:2 (except those containing TiO_2), fired up to 1400°C , ground up with a 1% admixture of mineralizer (B_2O_3 or ZnO), and refired at 1500°C , a good sintering was obtained, the reaction was complete, and the samples were stable both in air and during boiling in ammonium acetate and ammonium nitrate solutions. It is concluded that materials based on Ln_2O_3 and Nd_2O_3 can be used as special-purpose refractories (systems with ZrO_2 , Cr_2O_3 , Y_2O_3 , Al_2O_3 , SiO_2) with melting points at 2000°C and above and also as radio ceramics (systems with TiO_2 , ZrO_2 , Al_2O_3 , Y_2O_3 and SnO_2) and semiconductors (systems with CeO_2 , Cr_2O_3 , ZrO_2 , Fe_2O_3). Orig. art. has: 3 figures and 5 tables.

SUB CODE: 07// SUBM DATE: 27Mar64/ ORIG REF: 008/ OTH REF: 014

Card 2/2 *UUR*

L 29606-66 EWT(m)/ETC(f)/T/EWP(e)/ENP(t)/ETI IJP(c) AT/WH/JH/JD/JG
ACC NR: AP6011322 (A) SOURCE CODE: UR/0363/66/002/003/0517/0523 56

AUTHOR: Leonov, A. I.; Andreyeva, A. B.; Shvayko-Shvaykovskiy, V. Ye.; Keler, E. K. B

ORG: Institute of Silicate Chemistry im. I. V. Grebenshchikova, Academy of Sciences
SSSR (Institut khimii silikatov Akademii nauk SSSR)

TITLE: High temperature chemistry of cerium in Al_2O_3 , Cr_2O_3 , Ga_2O_3 cerium oxide systems

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 3, 1966, 517-523

TOPIC TAGS: cerium, aluminum, chromium, gallium, oxide, cerium compound

ABSTRACT: The effect of temperature (up to $2600^{\circ}C$) on structural properties of mixed oxide systems composed of CeO_2 and Al_2O_3 , Cr_2O_3 , or Ga_2O_3 was studied in air and hydrogen atmospheres. The phase relationships in the Ce_2O_3 - Al_2O_3 system are shown in fig. 1. The phase relationships in Ce_2O_3 - Cr_2O_3 systems are shown in fig. 2. It was found that CeO_2 does not form chemical compounds with oxides of Al, Cr, and Ga. Above $1650^{\circ}C$ in air atmosphere, mixtures of oxides (e. g., Ce_2O_3 - Al_2O_3 , Ce_2O_3 - Cr_2O_3 , and Cl_2O_3 - Ga_2O_3) form perovskite-type compounds ($CeAlO_3$, $CeCrO_3$, and $CeGaO_3$) admixed with the corresponding starting oxides. Pure $CeAlO_3$ and $CeCrO_3$ were obtained in a reducing atmosphere. Pure cerium gallite was synthesized by fusing a mixture of CeO_2 with Ga_2O_3 and

UDC: 546.655.3+546.763+546.683+546.623

Card 1/3

L 29606-66

ACC NR: AP6011322

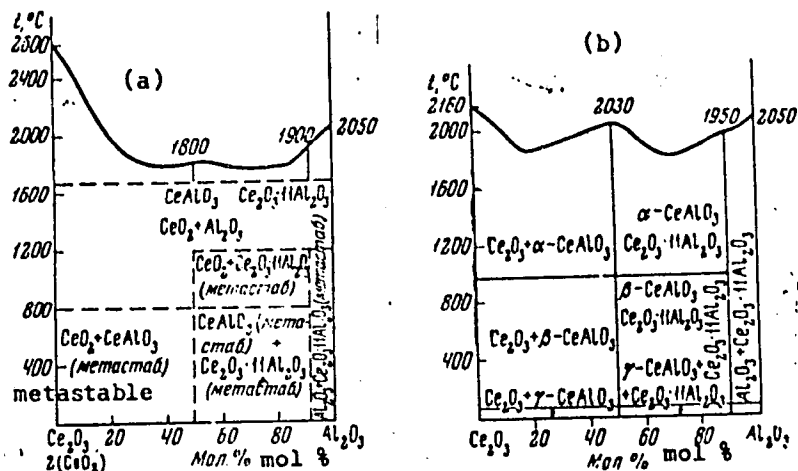


Fig. 1. a--in air; b--in hydrogen.

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L 29606-66

ACC NR: AP6011322

0

metallic Ga in a sealed evacuated ampoule. CeAlO_3 and $\text{Ce}_2\text{O}_3 \cdot 11\text{Al}_2\text{O}_3$ form in the

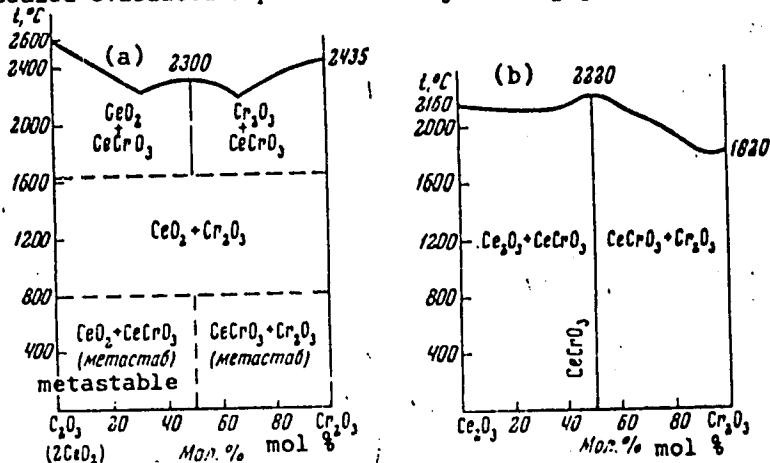


Fig. 2. a--air; b--hydrogen.

Ce_2O_3 - Al_2O_3 system. Only one compound with a 1:1 ratio is formed in each of the Ce_2O_3 - Cr_2O_3 and Ce_2O_3 - Ga_2O_3 systems. Orig. art. has: 6 figures, 2 tables.

SUB CODE: 07/ SUBM DATE: 27Jun65/ ORIG REF: 007/ OTH REF: 005

Card 3/3 CC

L 06488-67 EWT(m)/LWP(e) WH
ACC NR: AP6028300

SOURCE CODE: UR/0363/66/002/006/1047/1054

AUTHOR: Leonov, A. I.; Keler, E. K.; Andreyeva, A. B.

ORG: Institute of Silicate Chemistry im. I. V. Grebenshchikov, Academy of Sciences, SSSR (Institut khimii silikatov Akademii nauk SSSR)

TITLE: Status of research on the systems $\text{La}_2\text{O}_3\text{-ZrO}_2$, $\text{Ce}_2\text{O}_3\text{-ZrO}_2$ and $\text{Nd}_2\text{O}_3\text{-ZrO}_2$

SOURCE: AN SSSR. Izvestiya. Neorganicheskkiye materialy, v. 2, no. 6, 1966, 1047-1054

TCPIC TAGS: lanthanum compound, cerium compound, zirconate, titanate, silicate, aluminate, refractory, oxide ceramic, chromium compound

ABSTRACT: Phase relationships in the systems $\text{La}_2\text{O}_3\text{-ZrO}_2$, $\text{Ce}_2\text{O}_3\text{-ZrO}_2$ and $\text{Nd}_2\text{O}_3\text{-ZrO}_2$ are discussed on the basis of phase diagrams and x-ray and chemical data reported in the literature. A study of the stability and oxidation resistance of the compounds $\text{Ce}_2\text{Zr}_2\text{O}_7$, $\text{Ce}_2\text{Ti}_3\text{O}_{14}$, $\text{Ce}_2\text{Si}_2\text{O}_7$, CeCrO_3 and CeAlO_3 at high temperatures showed that cerium zirconate is the least stable compound. Literature data on phase relationships in ceramic systems of the type $\text{Ln}_2\text{O}_3\text{-ZrO}_2$ indicate that the current methods of studying oxide ceramics¹⁷ (x-ray diffraction, microscopy, chemical phase analysis) are inadequate because they yield averaged characteristics of the structure and composition of matter. Future development of studies of zirconium refractories should involve the study of the actual structure and composition in microvolumes by methods of microauto-

Card 1/2

UDC: 666.3

L 06297-57 EWP(e); EWT(m)/SWP(e)/SWP(t)/STI IJP(c) AT/WH/JD/JG/GD

ACC NR: AT6027155

(A)

SOURCE CODE: UR/0000/65/000/000/0288/0293

AUTHOR: Andreyeva, A. B.; Keler, E. K.

ORG: none

TITLE: Synthesis and some properties of ceramic materials based on titanium dioxide and oxides of lanthanum, neodymium and yttrium

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 288-293

TOPIC TAGS: titanium dioxide, ceramic material, lanthanum oxide, neodymium compound, yttrium compound

ABSTRACT: The paper constitutes a part of a cycle of studies aimed at ascertaining the value of rare earth oxides in the preparation of ceramic materials, and considers the effect of various rare earths in titanium-containing compositions. The mixtures studied were prepared in the proportions $\text{La}_2\text{O}_3:\text{TiO}_2$, $\text{Nd}_2\text{O}_3:\text{TiO}_2$, $\text{Y}_2\text{O}_3:\text{TiO}_2 = 1:1$ and $1:2$, ground, pressed, and sintered. They were found to sinter at 1350°C , but to have a very narrow sintering range and to fuse at 1400°C . A study of the kinetics of the reaction of La_2O_3 and Nd_2O_3 with titanium oxide showed that after 2 to 3 hr at 1300° and 1/2 hr at 1400° the reaction nearly reaches completion. In order to obtain materials with a porosity close to zero, measurements of the electric properties, resistiv-

Card 1/2

L 06297-67

ACC NR: AT6027155

ity, elastic, acoustic and certain other properties were made which showed the presence of materials having valuable physical and technical characteristics in the systems studied. Orig. art. has: 3 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: 10Oct63/ ORIG REF: 001/ OTH REF: 004

Card 2/2 *ap*

ACC NR: AP6021571

(A)

SOURCE CODE: UR/0131/66/000/003/0042/0048

AUTHOR: Leonov, A. I., Keler, E. K.; Andreyeva, A. B.

ORG: Institute of Silicate Chemistry Im. I. V. Grebenshchikov, AN SSSR (Institut khimii silikatov.
AN SSSR)

TITLE: Effect of a gaseous medium on chemical reactions and polymorphic transformations in the system zirconium dioxide-cerium oxides

SOURCE: Ogneupory, no. 3, 1966, 42-48

TOPIC TAGS: cerium compound, zirconium compound, gas, oxygen, refractory compound ,
CHEMICAL VALENCE, CHEMICAL STABILIZER

ABSTRACT: The effect of partial pressure of oxygen on valency changes of Ce in the system ZrO_2 -Ce oxides and on the physico-chemical properties of refractories in this system is investigated. CeO_2 is the most effective stabilizer of ZrO_2 . In the system ZrO_2 - CeO_2 solid solutions of three types take form —monoclinic, tetragonal and cubic. CeO_2 , which is present in the solid solution in ZrO_2 , changes to trivalent state at high temperatures in a reducing atmosphere (H_2 , CO, NH_3), in a flow of inert gases (Ar, Ne) and in flame-furnace atmospheres

Card 1/2

UDC: 546.831:666.76

10000 : 10000
10000 : Pharmacology, Toxicology, Local Anesthetics

10000 : ZEBiol., No. 12, 1958, No. 3000

10000 : Andreyshev, A.G., Bogdanov, I.I., Dneprov, I.I.
10000 : General Sanitation- hygiene and Institute
10000 : the problem of the treatment of ulcer patients
with novocaine.

10000 : Tr. Leningr. univ.-Leningr. univ. Inst., 1977,
Vol. 51, 87-97

10000 : Visceral anesthesia by the method of A.I. Bogdanov
was carried out in 915 patients. In 80% of the
patients, pain disappeared (within 1-2 days), in
10% it diminished. There was simultaneous im-
provement in appetite and sleep, a reduction or
disappearance of dyspeptic manifestations. Control
long-term studies (over a 2-year period) demonstrated
in 50% of the patients an absence of the disease
with good general well-being and freedom from
symptoms. -- A.I. Bogdanov

10000 : 1/1

ANDREYEVA, A.G.; BUGAYEVA, E.I.

Changes in the proteinogram in anicteric Botkin's disease.
Zdrav. Bel. 9 no.8:20-21 Ag'63 (MIRA 17:3)

1. Iz kafedry infektsionnykh bolezney (zav - prof. V.V.
Kosmachevskiy) Leningradskogo sanitarno-gigiyenicheskogo me-
ditsinskogo instituta.

ANDREYEVA, A. G.
CA

Effect of the grain dimensions on the diffusion of nitrogen in iron. A. G. Andreeva, I. R. Kontorovich, and A. A. Sovolova. *Zhur. Tekh. Fiz.* 17, 1521-6 (1947). Samples of Armco Fe of different grain sizes (detd. by micrograph) were produced by compression (up to 40%) and 4 hrs. recrystn. at 800°. The amts. of N₂ absorbed in 3-hr. nitrogeneration in disocd. NH₃ (20% dissocn.) at 520°, followed by slow cooling, were detd. by weighing, and the depth of penetration of N₂ by microscopy. In the grain size range 0.007-0.08 mm., diffusion of N₂ into Fe increases with the grain size, and the depth of the diffusion layer varies from 0.20 mm. for the finest grain to 0.60 mm. for the coarsest grain. In superficial diffusion, absorption of N₂ varies little with the grain size, but the concn. of N in the surface layer is greater in the finer-grained Fe, owing to the greater depth of penetration in coarser-grained Fe. The rate of diffusion of elements forming interstitial solid solns. with Fe appears to be greater in the energetically more stable system which is the coarser-grained metal. N. Thon

18(3), 5(4)

AUTHORS: Blok, N. I., Kozlova, M. N., Lashko, N. F., S.V./43-24-11-1, 57
Andreyeva, A. G.

TITLE: Phase Analysis of Nitrided Steels (Fazovyy analiz -
tirovannykh staley)

PERIODICAL: Zavodskaya Laboratoriya, 1990, Vol 24, No 11,
pp 1315 - 1319 (USSR)

ABSTRACT: To study the many kinds of corrosion resistance of
nitrided surfaces of rust-resistant steels an analytical method was developed, and the phases and the
distribution of the alloyed elements were investigated.
The experiments were carried out on **25Kh18N9V2 steel**,
with the participation of N.M. Rudneva, chief engineer.
X-ray structural analysis showed two layers on the
surface of the nitrided layers: the Fe-N layer with
hexagonal crystal lattice and the Fe-C layer with
a cubic lattice. The phases could best be separated with an
electrolyte consisting of 50 ml. HCl (1:1.5) and
1150 ml methanol, at a current density of 0.025 Ampere/cm²,
a temperature of -5° to -10°, and over a duration

Card 1/3

Phase Analysis of Nitrided Steels

SCV/22-24-11-0,37

of 20-30 minutes. The anodic deposition consisted of iron carbon nitride, chromium nitride, and chromium carbide. The separation of the chromium nitride from the iron carbon nitride was carried out using the method of N.M. Popova (Ref 2). The nitrided samples dissolved in the anodic dissolution up to 0.035 mm deep. Up to a depth of 0.17 mm the nitrided layer consisted of three phases: the carbon nitride of the iron and chromium $(Fe, Cr)_2(N, C)$, the chromium nitride CrN , and the solid solution enriched with nitrogen and nickel. This layer possessed a positive electrode potential and was highly resistant to corrosion. The nitrides occurred at a depth of 0.17 to 0.22 mm and the layer consisted of Fe, N, CrN , $Cr_{23}C_6$, and the solid solution. The nitrogen concentration was 0.3 - 0.4%, the electrode potential negative, and the corrosion resistance decreased. In the still deeper layers the chromium content was 15% with only 3% present as the $Cr_{23}C_6$. It showed a positive electrode potential and a high resistance to

Card 2/3

Phase Analysis of Nitrided Steels

SCV/12-04-11-4,37

corrosion. Investigations on nitrided Argeo iron showed that the nitride phase up to a depth of 0,025 mm consists of Fe_4N and up to a depth of 0,05 mm of Fe_3N . The general content in the nitride phase was 4 18-30%, while the rest was a solid solution. There are 1 figure, 5 tables, and 1 reference, which is Soviet.

Card 5/5

SOV/133-59-1-18/23

A AUTHORS: Alekseyenko, M.F., Candidate of Technical Sciences and
Andreyeva, A.G., Engineer

TITLE: A New Austenitic Steel for Nitriding (25Kh18N8V2)
(Novaya austenitnaya stal' dlya azotirovaniya (25Kh18N8V2)

PERIODICAL: Stal', 1959, Nr 1, pp 78 - 81 (USSR)

ABSTRACT: For the manufacture of parts from which a high wear and corrosion resistance is required, nitrided EI69 (4Kh14N14V2M) steel is used at present. However, this steel has a number of deficiencies: a) a low depth of nitrided layer (0.11 mm); b) long duration of the nitriding process (60 hours, an increase to 100 hours increases the depth of the layer only by 0.01 mm); c) high brittleness of the nitrided layer caused by a sharp hardness gradient along the depth of the layer; d) tendency of shelling and e) insufficient strength of the core. In order to find a more suitable type of steel nitriding of specimens of a number of stainless steels of standard production as well as specially prepared alloys was carried out and their properties investigated. The experimental results for most typical steels are given in Tables 1 and 2 and Figures 1-6. On the basis of the results obtained replacement of steel EI69 used at present

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SOV/133-59-1-18/23

- A New Austenitic Steel for Nitriding (25Kh18N8V2)
by steel 25Kh18N8V2 (C 0.25%, Cr 18.4%, Ni 7.5%,
W 2.2%) is recommended. The use of the proposed steel
instead of EI69 has the following advantages: 1) rapid
nitriding to a depth of 0.18 mm in 40 hours; 2) a stronger
core; 3) a more uniform hardness gradient from the
surface to the core; 4) a deeper zone of positive
corrosion resistance and 5) absence of shelling.
There are 6 figures, 2 tables and 3 references, 2 of
which are Soviet and 1 English.

ASSOCIATION: VIAM

Card 2/2

SOV/129..59..4-7/17

AUTHORS: Andreyeva, A.G. (Engineer) and Gurvich, I.Ya. (Candidate of Technical Sciences)

TITLE: Influence of Nitriding on the Resistance to Corrosion of Stainless Steels (Vliyaniye azotirovaniya na korroziionnyu stoykost' nerzhavayushchikh staley)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 4, pp 34-40 (USSR)

ABSTRACT: Materials used for a number of components subjected to abrasion wear in a medium containing water must possess a high surface hardness, a high wear resistance, a tough core and a high stability against corrosion. If they are used in conjunction with aluminium alloys, such components must also have a high coefficient of linear expansion. Furthermore the surface hardness must be maintained at temperatures up to 300 - 400°C. Nitrided stainless steel possesses this required combination of properties. However, the stability against corrosion of the surface layer of stainless steel decreases as a result of the nitriding. In the work described in this paper optimum regimes of nitriding were determined for the steel 4Kh14N14V2M, which ensured that the depth of nitriding and the hardness of the nitrided layer were

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30V/129-59-4-7/17

Influence of Nitriding on the Resistance to Corrosion of Stainless Steels

adequate and there was only a very slight reduction in the stability of the material against corrosion. The nitriding is effected at 560°C for a duration of 48 - 60 hours; the degree of dissociation is 25 to 40%. As a result a 0.09 - 0.11 mm thick nitrided layer is obtained with a hardness $H_V = 800 - 900$, with a minimum brittleness and a satisfactory resistance to corrosion. The corrosion resistance of the layer is influenced particularly by the degree of dissociation of the ammonia. Data on the corrosion stability obtained for nitrided specimens which were ground to a depth of 0.03 mm are entered in Table 1, p 34. In the here-described work the authors investigated the electrode potentials of the steels 4Kh14N2V2 and 4Kh14N14V2M in a 0.01 N solution of sodium chloride. The compositions of these steels were as follows: 4Kh14N14V2M, 0.4% C, 13.75% Cr, 12.6% Ni, 1.5% W, 0.5% Mo, 0.4% Si, 0.7% Mn; 4Kh14N2V2, 0.4% C, 13.5% Cr, 2.68% Ni, 2% W, 0.55% Si, 0.55% Mn. The electrode potentials were measured for the entire depth of the nitrided layer and this layer was successively ground to various depths from 0.015 to 2.2 mm. On the basis of the obtained results, which are Card 2/4 tabulated and graphed, the following conclusions are

SOV/129-59-4-7/17

Influence of Nitriding on the Resistance to Corrosion of Stainless Steels

arrived at: 1) the change in the resistance to corrosion of nitrided steels as a function of the depth of the ground-off layer, corresponds to the change in the magnitude of the electrode potential. 2) The presence was established of four zones along the depth of the nitrided layers of stainless steels which are characterised by specific corrosion properties and corresponding magnitudes of the electrode potentials. 3) The author assumes that the layers with reduced corrosion stability and reduced electrode potentials which were detected at a certain depth of the nitrided layers of stainless steels, consist of chromium nitrides and of a solid solution which is impoverished in chromium and nitrogen. 4) When manufacturing components of nitrided stainless steels it is necessary to take into consideration the extent of the zones with high and

Card 3/4

SOV/129-59-4-7/17

Influence of Nitriding on the Resistance to Corrosion of Stainless Steels

with low corrosion stability after grinding or other types of machining.

There are 5 figures, 4 tables and 6 references, 3 of which are Soviet, 3 English.

Card 4/4

UDINTSEV, G.N.; ANAN'INA, Z.N.; ANDREYEVA, A.G.; BLANK, V.B.; GAYLAN, Ya.I.;
YEGOR'KOVA, A.S.; ZUBZHITSKIY, Yu.N.; IL'INA, N.D.; KAMRAZ, I.V.;
KARRO, L.M.; MIROYEVSKAYA, Z.Ye.; NECHAYEVA, Ye.A.; PARNOV, B.S.

Influenza in 1957 from data of the hospital therapeutic clinic of
the Leningrad Institute of Sanitation and Hygiene, Sov.med. 23
no.10:67-70 0 '59. (MIRA 13:2)

1. Iz gospi'tal'noy terapevticheskoy kliniki (zaveduyushchiy - chlen-
korrespondent AMN SSSR prof. G.N. Udintsev) Leningradskogo sanitarno-
gigiyenicheskogo meditsinskogo instituta.
(INFLUENZA statistics)

А.И.ДРЕ.ГЕ.В.А., А.Г.

18.8300

77155
SOV/129-60-1-3/22

AUTHORS: Gurvich, L. Ya. (Candidate of Technical Sciences),
Andreyeva, A. G. (Engineer)

TITLE: Protection of Nitrided Stainless Steel Parts Against
Corrosion in Water

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1960, Nr 1, pp 10-13 (USSR)

ABSTRACT: Since the corrosion resistance of nitrided stainless
steels under the action of water is not uniform through-
out the nitrided layer, the authors divide the latter
into various zones according to corrosion resistance.
Only few data are available on the behavior of nitrided
stainless steels toward corrosion during the processes
of bluing, passivating in sodium bichromate (Sidney,
L., "Steel," Nr 8, 1951) and lapping (Anderson, K.,
"Nitrided Steels for High-Temperature Water Service,"
1954). Nitrided specimens of 25Kh18NB2-steel (compo-
sition not given) ground to the unstable (noncorrosion

Card 1/2

100-100000

100-100000

AUTHOR: Amiryan, A. G. (or Amiryan, A. P.) (Doctor of Technical Sciences, Professor)

TITLE: Case Hardening of Mn-Alloyed Steels

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No. 4, pp. 1-11 (USSR)

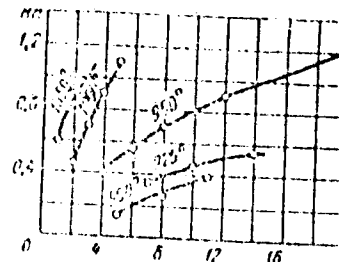
ABSTRACT: This is a report concerning an experimental investigation of steel Kh17N (E17N), containing 0.17% C; 16.7% Cr; 2.2% Ni. Case hardening was done by gas carburizing agent which forms during evaporation of pyrobenzol (mixture of benzene, toluene, etc) in the case hardening agent. The effect of depth of the layer on temperature and the duration of the process of case hardening is shown in Fig. 1. As is evident from Fig. 1, the temperature of 900° and 1,000° is not sufficient to high to obtain a sufficient depth layer (1 mm). The one mm layer is a result of case hardening at 900°, 1,000°, and 1,100° C for 10, 1, and 1 hr. The study covered

Doc 100-100000

Case Hardening of Stainless Steels

721.2
307.71 1-3-2/16

Fig. 1. Effect of temperature and duration of case hardening on the depth of the layer.



the following conditions: carbon content in case hardened layer; hardness of the case hardened layer, depending on the distance from the surface (or carbon content) after quenching from various temperatures; hardness of case hardened layer of Kh17Ni steel after tempering at 160° C, depending on carbon content; thickness of hard layer (RC 5-6), depending on tempering temperature for various temperatures. The authors arrived at the following conclusions. (1) For obtaining the layers of high hardness, it is

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Card 3/3

S/790/62/000/000/004/005

AUTHORS: Andreyeva, A.G., Gurvich, L. Ya.

TITLE: Corrosional and electrochemical properties of and protective methods for nitrided stainless steels.

SOURCE: Korroziya i zashchita metallov; sbornik statey. Ed. by V. P. Batrakov. Moscow, Oborongiz, 1962, 118-137.

TEXT: The primary objective of this experimental investigation is the determination of the effect of the degree of dissociation of NH_3 (range: 20-80%) in the surface layer of nitrided specimens of 4X14H14B2M (4Kh14N14V2M) steel, the so-called 3X69 (E169) steel, on its corrosion characteristics. 2 tables summarize the findings. All specimens were uniformly ground down to a 0.03-mm depth for comparative tests; grinding to different depths revealed the existence of four different layers: (1) An exterior zone with low corrosion resistance (CR) in water and a relatively negative electrode potential; (2) beginning at a 0.01-mm depth, a zone with elevated CR in water and relatively high positive electrode potentials; (3) beginning at depths ranging from 0.03 to 0.16 mm in various steels, a zone with low CR and low electrode-potential values; (4) the core material with an elevated CR and relatively high positive potential. The technique and results of the potential

Card 1/3

Corrosional and electrochemical properties ...

S/790/62/000/000/004/005

protection against water and moist-air corrosion can be obtained by treatment in a boiling solution composed of 10% $K_2Cr_2O_7$; 10% NaCl; 0.3% Na_2SO_4 . There are 6 figures, 9 tables, and 10 references (6 Russian-language Sources; 4 English-language USA). The participation in the work of V. M. Agafonova, V. A. Mashin, and L. N. Platova is acknowledged. ✓

ASSOCIATION: None given.

Card 3/3

S/129/63/000/001/008/017
E073/E335

AUTHORS: Fomenko, G.D., Engineer, Yegorov, V.S. and Andreyeva, A.G., Candidates of Technical Sciences

TITLE: Investigation of the contact strength of case-hardened steel 12'3- (12KhN3A)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1963, 23 - 25

TEXT: The effect of carbon concentration in the case-hardened layer on the contact- and fatigue-strength was investigated on specimens carburized (for 4 h) to a depth of 1-2 mm in a 15-litre capacity laboratory furnace. Sintin was used as a carburizer and the carbon content of the surface layer was about 0.75% if 5 drops/min were applied and about 1.3% if 20 drops/min were applied. After cooling in air, the specimens were heated in a salt bath to 780-800 °C, oil-quenched, cooled to -70 °C and tempered at 150 - 170 °C. The surface was then ground-off to a depth of 0.1 mm; the surface hardness was 61-63 HRC. The specimens were made to rotate between clamping rings to simulate the loading conditions of gear teeth; they were subjected during

Card 1/2

Investigation of

S/129/63/000/001/008/017
E073/E335

rotation to contact stresses varying along the circumference, the maximum being 700 kg, as well as to about 2% slip. The maximum contact strength, about 3 350 kg/cm², was obtained with a 1.1% C content of the surface layer. In this case, the structure of the surface zone was acicular martensite with fine carbide plates and grains. The fatigue strength increased almost linearly from about 68 kg/mm² for 0.6% C of the surface layer to about 75 kg/mm² for 0.9% C and remained almost constant with increasing C content. Therefore, to achieve the highest fatigue and contact strength the surface layer of case-hardened steel should be saturated to contain 1 - 1.2% C.

Card 2/2

FOMENKO, G.D., inzh.; YEGOROV, V.S., kand.tekhn.nauk; ANDREYEVA, A.G.,
kand.tekhn.nauk

Investigating the resistance to tangential stress of 12KhN3A
case-hardened steel. Metalloved. i term. obr. met. no.1:23-25
Ja '63. (MIRA 16:2)

(Steel--Testing)

(Case hardening)

ANDREYEVA, Antonina Georgiyevna; BABUK, G.V., otv. red.;
KONDRAT'YEVA, V.K., red.

[Horizontal sweep stages] Blok strochnoi razvertki. Mo-
skva, Izd-vo "Sviaz'," 1964. 69 p. (Biblioteka "Televizion-
nyi priem," no.11) (MIRA 17:5)

YEGOROV, V.S.; ANDREYEVA, A.G.; FOMENKO, G.D.

Gas cyaniding and cementation of Kh17N2 (EI268) stainless steel.
Metalloved. i term. obr. met. no.3:33-37 Mr '64. (MIRA 17:4)

ACCESSION NR: AP4020246

S/0129/64/000/003/0033/0037

AUTHOR: Yegorov, V. S.; Andreyeva, A. G.; Fomenko, G. D.

TITLE: Gas cyaniding and carburizing of stainless Kh17N2-(EI268) steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1964, 33-37, and insert facing p. 41

TOPIC TAGS: diffusion layer, hardness, carburization, cyanidation, sub zero treatment, Kh17N2 steel, stainless steel

ABSTRACT: The authors investigated the possibility of obtaining a thin layer with a hardness higher than Rockwell hardness 58. For that purpose, steel Kh17N2 specimens were cyanided in a 10-liter laboratory muffle furnace into which pyrobenzol and ammonia were introduced. Air cooling was followed by oil quenching from 1020 C. Finally, the specimens were treated at -70 C and subsequently tempered at -160 C. Hardness was highest after treatment at 700-750 C. The zone with a hardness of $H_{\mu}=700$ was 0.075-0.12 mm deep. 40-45 cm³/min ammonia and 15 to 18 drops pyrobenzol per minute introduced into the furnace were found to enhance hardness which reached $H_{\mu}=1040$ without changing the depth of the active

Cord 1/2

L 40006-65 EWT(d)/EWT(m)/EPP(c)/EWA(d)/EWF(v)/EPR/T/EWP(t)/EWP(k)/EWP(y)
EW(s)/EWP(b)/EWP(l) Pf-L/Pr-L/Ps-L/Pu-L/Pad IJP(c) MJW/JD/HW/JG/QS
ACCESSION NR: AT4049813 8/0000/64/000/000/0036/0062

AUTHOR: Alekseyenko, M. F.; Andreyeva, A. G.; Yegorov, V. S.; Fomenko, G. D.

TITLE: Hardening of stainless heat resistant and heatproof steels by thermal diffusion

SOURCE: Soveshchaniye po uprochneniyu detaley mashin, 1962. Protsessy uprochnen-
iya detaley mashin (Processes of the hardening of machine parts); doklady sovesh-
chaniya. Moscow, Izd-vo Niuka, 1964, 56-62

TOPIC TAGS: stainless steel, stainless steel hardening, stainless steel thermal
diffusion, stainless steel nitriding, stainless steel carburizing, heat resistant
steel, heatproof steel, steel corrosion resistance

ABSTRACT: The paper describes the results of investigations of the surface hard-
ening of stainless heatproof and heat-resistant steels. These tests were required
in order to increase the durability and wear resistance of parts operating under
corrosive conditions, as well as at high temperatures. Austenitic EI-69 and EI-
946 steel, SN2, SN3 and SN4 steel, martensitic 1Kh13, Kh17N2, EI-736 and EI-96
steel, as well as EI-696 and EI-786 heat resistant steels were tested. Prior to

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140006-65

ACCESSION NR: AT4049813

8

thermal diffusion, the oxides on the stainless steel should be removed by sand blasting, etching and other methods. The best method is nitriding with NH_4Cl . Corrosion stability is lowered when stainless steels are nitrided. In martensitic and ferritic nitrided steels, 50-80% of the total thickness of the nitrided layer shows low corrosion stability, while in austenitic steels this is only true of 20-40%. This depth depends on the phase composition and chromium and nitrogen content in the solid solution. The depth of the nitrided layer depends on the grade of steel, 38KhMYuA steel having the deepest nitrided layer. In turn, this depends on the type of crystal lattice and quantity of alloying elements. As the content of chromium increases, the depth of the nitrided layer drops, being 0.2 mm for a chromium content of 25%. Increasing the temperature from 560 to 650C does not affect the depth of the layer. Nickel lowers the nitride depth to an even greater extent. The addition of tungsten, molybdenum, titanium, vanadium and aluminum up to 5% lowers the depth to the same degree as chromium, but in this case the depth of the nitride layer depends on the temperature. The optimal depth of nitriding for martensitic steel is attained at 550-600C. Austenitic steels show a limiting depth at 550C. The hardness of the nitrided steel depends on the nitriding compounds and temperature, determining the degree of nitride dispersion.

Card 2/3

I 10006-65

ACCESSION NR: AT4049813

Variation of nickel content does not change the hardness. Nitrided stainless steels tested on the IMASH machine showed high wear resistance up to 600C. The coefficient of friction dropped from 0.7 at 20C to 0.1 at 600C. The quality of the nitride layer depends on the grain size. Carburizing of heat treated steel also results in loss of corrosion stability. This is explained by the redistribution of chromium between the solid solution and the carbides. By nitrocarburizing it is possible to harden all tested grades of steel, especially Kh17N2 and EI-696 steel, but the same loss of corrosion stability is observed. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 21 May 64

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 000

Card 3/3 *fm*

I. 4535-65 EWT(a)/EPP(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) Pad IJP(c)
HJW/JD/HW/JG/W/QS

ACCESSION NR AT5011350

UR/0000/65/000/000/0170/0183

AUTHOR: Andreyeva, A.G.; Blck, N.I.; Kozlova, M.N.; Lashko, N.F.

TITLE: Some aspects of the phase analysis of nitrated steel

SOURCE: Fazovy sostav, struktura i svoystva legirovannykh staley i splavov (Phase composition, structure, and properties of alloy steels and alloys). Moscow, Izd-vo Mashinostroyeniya, 1965, 170-183

TOPIC TAGS: steel phase analysis, nitrated steel, stainless steel, iron nitride, chromium nitride, steel corrosion resistance, chromium carbide

ABSTRACT: The authors developed a method of phase analysis for the nitrated layers of stainless steels which consists of the anodic dissolution of layers of the sample, x-ray and chemical analysis of the isolated phases, and chemical analysis of the various portions of the electrolyte whose composition is analogous to that of the solid solution. Steels 2Kh13, E169, E1946, and 25Kh18N8V2 were nitrated and analyzed. A nonaqueous electrolyte, 50 ml HCl (1.19) + 1150 ml methanol, was used for the isolation of the iron nitride (Fe_2N , Fe_3N) and chromium nitride phases (Cr_2N , CrN) from such austenitic and martensitic steels. The hard, wear-resistant, corrosion-resistant, nitrated layer on

Card 1/2

L 115135-65

ACCESSION NR: AT5011350

steel EI948 consists of the two phases $(Fe, Cr)_2N$ and CrN , and also a solid solution rich in nitrogen and depleted of chromium. At a depth of 0.17 to 0.22 mm, the corroding layer consists of the nitride phase CrN and carbide phase $Cr_{23}C_6$ and a solid solution depleted of chromium and nitrogen. The corrosion-resistant core is a solid solution containing about 15% Cr and 3% $Cr_{23}C_6$. The phases $(Fe, Cr)_2N$ and CrN were found to have a variable composition; in the former, half of the iron atoms can be replaced by chromium atoms, and nickel and tungsten enter into its composition, but in smaller amounts. The CrN phase contains up to 1.5% W and small amounts of nickel and iron. "N.M. Rudneva and K.V. Smirnova participated in the experimental part of the work." Orig. art. has: 2 figures and 10 tables.

ASSOCIATION: none

SUBMITTED: 17Dec64

ENCL: 01

SUB CODE: MM, SS

NO REF SOV: 014

OTHER: 002

Cord: 2/2

L 5036-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) IJP(c) MJW/JD/
 30/03

UR/0000/65/000/000/0184/0190

ACCESSION NR: AT5011351

AUTHOR: Andreyeva, A. G.; Kozlova, M. N.; Lashko, N. F.

TITLE: Phase analysis of the carburized layer of Kh17N2 steel

SOURCE: Fazovyv sostav, struktura i svoystva legirovannykh staley i splyavov (Phase composition, structure, and properties of alloy steels and alloys). Moscow, Izd-vo Mashinostroyeniye, 1985, 184-190

TOPIC TAGS: steel phase analysis, steel carburizing, chromium nickel steel, steel surface layer, carbide structure, cementite, chromium carbide, steel corrosion, Kh17N2 steel

ABSTRACT: The phase composition of the carburized layer on chromium-nickel steel Kh17N2 was determined. The carburized samples were hardened at 1000C, subjected to sub-zero treatment at -70C, and tempered at 160C for 2 hrs. Anodic dissolution was carried out in an electrolyte consisting of 50 ml HCl and 1000 ml methanol at a current density of 0.06 A/cm² and temperatures of -5C and -7C. X-ray structural analysis of the anodic deposits revealed the presence of the trigonal carbide Cr₇C₃ as the main phase. The cementite (Fe, Cr)₃C containing only about 6% Cr was found in the surface layer to

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L 45136-65

ACCESSION NR: AT5011351

depth of 0.05-0.10 mm together with the chromium carbide. The carbide Cr_{23}C_6 was identified in layers more than 0.6 mm deep, due to the decreasing carbon content. In surface layers up to 0.3 mm thick, most of the chromium is bound up in the carbides, and some enters into the composition of the solid solution. In deeper layers, as the chromium carbide content declines, the chromium content in the solid solution correspondingly increases. The solid solution at 0.05-0.10 mm has a low corrosion resistance because of the presence of the low-Cr cementite and low-Cr solid solution. "N. M. Rudneva and K. V. Smirnova participated in the experimental part of the work." Orig. art. has 2 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 17Dec64

ENCL: 00

SUB CODE: MM, SS

NO REF SOV: 008

OTHER: 002

Card 2/2

L 6484-66

ACC NR: AP5025596

EWI(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/ID/HW/MJW(CI)

SOURCE CODE: UR/0129/65/000/010/0032/0034

AUTHOR: Terekhova, V. V.; Andreveva, A. G.

ORG: none

TITLE: Calorizing nickel-base alloys

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 32-34

TOPIC TAGS: steel, alloy steel, heat resistant steel, steel calorizing, calorized steel mechanical property, steel oxidation resistance/EI867 steel, EI929 steel, ZhS6K steel

ABSTRACT: EI867, EI929, and ZhS6K heat-resistant alloys were calorized in a mixture consisting of 98% ferroaluminum master alloy and 2% ammonium chloride at 850-1110C for 2, 4, and 8 hr in order to determine the effect of the temperature and duration of exposure on the depth of the surface layer and on the structure, heat resistance, and mechanical properties of the alloys. The weight gain per unit surface, the calorized layer depth, and the rate of calorizing were found to increase with increasing temperature of calorizing. With increasing exposure time, the depth and the weight gain of the calorized layer increased at a parabolic rate. With increasing time of exposure at a constant temperature, the layer depth and weight gain increased, but the rate of calorizing decreased. The surface layer on EI867 and ZhS6K alloys calorized at 950C for 4 hr contained 37-40% Al at a depth of 15 μ . The

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UDC: 621.785.53:669.14.018.45

0701 1711

L 6484-66

ACC NR: AP5025596

calorized layer on all alloys consisted of an outer zone with a microhardness of 700—850 and an inner, thinner zone with a microhardness of 700—600, compared with 400—350 for the base metal. Annealing at 750C for 2 and 5 hr decreased the microhardness of the outer zone from 770 to 600 and 500, respectively, but had no effect on the hardness of the inner zone. Calorizing at 950C for 4 hr had no effect on the tensile, rupture, and fatigue strengths and ductility characteristics of the alloys at room and elevated temperatures, but significantly increased their oxidation resistance at 1000C. The oxidation resistance of the alloys did not depend on the temperature and duration of calorizing. This makes it possible to calorize heat-resistant nickel-base alloys at various temperatures and to combine calorizing with heat treatment. Orig. art. has: 4 figures. [MS]

SUB CODE: MM, IE/ SUBM DATE: none/ ATD PRESS: 4139



Card 2/2

ANDREYEVA, A-I

[illegible]

SUKHOVA, M.N.; ZAIROV, K.S.; GVOZDEVA, I.V.; ANDREYEVA, A.I.; NURULLAYEV, D.Kh.; TALIPOV, M.Z.; MOSUNOV, V.B.; STOROZHEVA, Ye.M.; SAMSONOVA, A.M.; SHAMIRZAYEV, N.Yu.; AKMURZAYEV, T.A.

Fly control and its organization in Uzbekistan. Med.zhur.Uzb.
no.3:3-14 Mr '62. (MIRA 15:12)

1. Iz Tsentral'nogo nauchno-issledovatel'skogo dezinfektsionnogo
instituta Ministerstva zdravookhraneniya SSSR (dir. - prof.
V.I.Vashkov) i sanitarno-epidemiologicheskoy organizatsii
Uzbekistana (glavnyy gosudarstvennyy sanitarnyy inspektor-
kand.med.nauk K.S.Zairov).
(UZBEKISTAN--FLIES--EXTERMINATION)

Y
ANDREEVA, A. I.

The sapropels as a source of high-molecular
carboxylic acids. D. A. Shvedov, S. A. Kuzin
and A. I. Andreeva. Masloboino-Zhiroyoe Delo
1934, No. 5, 30-2; cf. C. A. 28, 5961⁵. The
sapropels can be readily oxidized with HNO to
high-mol. carboxylic acids with a yield of 30-60%.

E. Bielouss

ANDREEVA, A. I.

The oxidizability of organic substances of the sapropels and the products of their oxidation. D. A. Shvedov, S. A. Kuzin and A. I. Andreeva. Khim. Tverdogo Topliva 5, 107-14 (1934). Sapropels are easily oxidized, giving a high yield (30--60%) of oxidation products that can be extd. with org. solvents and alkalies. The products of oxidation of sapropels, which are a mixt. of carboxylic acids and their saponifiable derivs., are characterized by high mol. wts. and high sapon. nos. They are low in H and I nos. Petr. ether-sol. acids are obtained in the oxidation. In the repeated oxidation are obtained acids which are sol. in ether and C_6H_6 , Et OH, which by their chem. properties approach the acids of the petr. ether fraction of the 1st oxidation. HNO_3 is the most efficient oxidizing medium for the above stage of the oxidation.

A. A. Bochtlingk

ANDREYEV, A. I.
Ca

Flotation of oxidized ores. D. A. Shvedov and A. I. Andreyev. Russ. 44,886, Nov. 30, 1955. Without a preliminary sulfidation a mercaptan is used as flotation reagent in a solution of an ammoniac amine, such as ethylamine, amine or xylolite.

ADD SLA METALLURGICAL LITERATURE CLASSIFICATION

ANDREYEVA, A. I.
CA

9

Flotation of carbonate copper ores with benzyl mercaptan and causes of its high consumption. 1). A. S. Svedov and A. I. Andreeva. *Tsvetnye Met.* 1935, No. 8, 67-70. ~~Exptl.~~ showed that excessively high consumption of mercaptan is due to losses resulting from its reaction with malachite, and formation of mercaptides of Cu and CO. The loss of mercaptan can be reduced by introducing it into the pulp in the form of its soln. in nonpolar solvents, or in difficultly water-sol. polar compds. B. N. Dauloff

AS 514 METALLURGICAL LITERATURE CLASSIFICATION

9

ANDREYEVA, A.I.
Ge...

Flotation of ores. A. I. Andreeva, S. A. Kuzin and D. A. Shvetsky. Russ. 46,500, April 30, 1960. Xanthate of Ba or Ca is used as a flotation reagent.

ASB 35.4 METALLURGICAL LITERATURE CLASSIFICATION

CIA-RDP86-00513R000101520019-2"

1ST AND 2ND ORDERS										PROCESSING AND PROPERTIES INDEX										3RD AND 4TH ORDERS									
<p>CA ANDREYEV, A.I.</p> <p>Separating boric acid from a mixture of salts. A. I. Andreeva. Russ. 53,493, June 30, 1928. H₂CO₃ is sepd. mainly from MgSO₄ or MgSO₃, etc., by flotation without flotation reagents</p>																													
<p>458-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																													
<p>SEARCHED SERIALIZED INDEXED FILED</p>																													

ANDREYEV, A. I.

Effect of oxidation on the flotation of sulfide minerals.

II. Sphalerite. D. A. Shvedov and A. I. Andreyev. *Gornochimichesk. Zhur.* No. 2, 26-31 (1968); *Eng. C.* 4, 32, 1218. Sphalerite contained Zn 64.0%, Cu 0.02%, Fe 0.02%, and Pb 0.28%. Wash a 10-g. sample with dist. water to remove all oxidation products not connected with the cryst. lattice (all complete products of oxidation). Add 50 cc. of H_2O_2 of definite concn., shake for 30 min., wash again with water in a H stream, add 0.1 N Na_2CO_3 or Na_2PO_4 , let stand for 15 min. with slight shaking, filter immediately, and divide the filtrate into 2 equal parts. In one part the reducing ions were detd. by titrating with 0.002 N I_2 , and in the second part the SO_4 ions were detd. by weighing H_2SO_4 . The total no. of ions displaced by the CO_3 ions was several times larger than that displaced by the PO_4 ions. The oxidation of ZnS by H_2O_2 results in the formation of the ZnS surface of SO_4 and S_2O_8 ions (m/m greater than 1:4) which are connected with the cryst. lattice of ZnS and may be removed by reaction with Na_2CO_3 . The action of H_2O_2 reduces flotation of ZnS in the presence of xanthate. Treatment with acids activates the ZnS surface and makes possible flotation with terpineol alone. B. Z. Kamich

AD 514 METALLURGICAL LITERATURE CLASSIFICATION

АНЖЕЛОВА, А. И.

CA

Flotation of oxidized Zn ores. A. I. Andreeva. Russ
57,001, Sept. 30, 1940. Before flotation, the ore is heated
with a sulfidizing reagent.

9

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

BELASH, F.N., prof.; ANDREYEVA, A.I., inzh.

Flotation of hematite, martite and magnetite by fatty acids in various media. Izv. vys. ucheb. zav.: gor. zhur. no.12:165-170 (MIRA 14:1) '60.

1. Krivorozhskiy gornorudnyy institut. Rekomendovana kafedroy obogashcheniya poleznykh iskopayemykh Krivorozhskogo gornorudnogo instituta.
(Iron ores) (Flotation---Equipment and supplies)

BELASH, F.N.; ANDREYEVA, A.I.

Effect of oxidizers and the oxygen in the air on the flotation
of hematite and magnetite. Gor. zhur. no. 6:66 Je '61. (MIRA 14:6)

1. Krivorozhskiy gornorudnyy institut.
(Iron ores) (Flotation)

BELASH, F.N.; ANDREYEVA, A.I.

Interaction of martite and magnetite with sodium oleate at various pH. Dokl.AN SSSR 145 no.3:615-616 Pl. '62. (MLHA 15:7)

1. Krievorozhskiy gornorudnyy institut. Predstavleno akademikom S.I.Vol'kovichem.
(Martite) (Magnetite) (Sodium oleate)

L 13538-63 EPR/EWP(j)/EPF(c)/EWT(m)/RDS AFFTC/ASD Ps-4/Pc-4/Pr-4 RM/WW
ACCESSION NR: AP3003288 9/0138/63/000/006/0013/0017 72
70
15

AUTHOR: Angert, L. G.; Andreyeva, A. I.; Kuz'minskiy, A. S.

TITLE: Aging of vulcanized rubbers derived from methylvinylpyridine rubber
under static compression

SOURCE: Kauchuk i rezina, no. 6, 1963, 13-17

TOPIC TAGS: compression, static compression, aging of rubber, modulus of
compression, kinetics of relaxation, thiuram resins, deformation

ABSTRACT: The present study was undertaken to test the aging of vulcanized rubber articles subject to pressure in hydraulic installations. Six vulcanized rubbers were prepared on a 85% butadiene- and 15% 2-methyl-5-vinylpyridine base. Cylinders (8 by 10mm) were squeezed in a vise at a constant 30% deformation and allowed to age in the air and in nitrogen for a period of 10-20 days, at temperatures ranging from 100-150C. The modulus of initial stress of the vulcanized rubbers and the magnitude of their residual deformation were determined. It was found that the rubbers vulcanized with thiuram as well as with tetrachloroquinone were the most resistant to aging. Unlike the usually observed relationship between the rates of chemical relaxation and the accumulation of residual

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L 13538-63

ACCESSION NO: AP3003288

2
deformation in rubbers vulcanized with thiuram, sulfur, Altax, and tetraquinone, the present study showed the accumulation of residual deformation proceeding faster than the relaxation of stress. This may be due to the predominance under these conditions of structuration processes. The effect on aging of several organic antioxidants was also studied. Of these p-oxiphenyl-beta-naphthylamine was found to be the most effective in rubber vulcanized with sulfur and Altax. : Orig. art. has: 4 charts and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promy*shlennosti
(Scientific Research Institute of the Rubber Industry)

SUBMITTED: 00

DATE ACQ: 10Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 007

OTHER: 002

Card 2/2

BELASH, F.N., prof., doktor tekhn. nauk; ANDREYEVA, A.I., kand. tekhn.
nauk

Dressing iron ores from the Mikhaylovka deposit in the Kursk
Magnetic Anomaly. Sbor. nauch. trud. KGRI no.17:127-136 '63.

Interaction between martite and magnetite with sodium oleate.
Ibid.:145-149 (MIRA 17:1)

ANDREYEVA, A.L.; DENISENKO, Ya.I.

Spectrophotometric determining of pigments in sorghum oil. Izv.-
vys.ucheb.zav.; pishch.tekh. 2:153-154 '62. (MIRA 15:5)

1. Moskovskiy tekhnologicheskoy institut pishchevoy promyshlennosti,
kafedra organicheskoy khimii.
(Oils and fats--Analysis) (Sorghum)

DENISENKO, Ya.I.; ANDREYEVA, A.L.

Hydrogenation of grain sorghum oil. Izv.vys.ucheb.zav.; pishch.
tekhn. no.3:72-73 '63. (MIRA 16:8)

1. Moskovskiy tekhnologicheskoy institut pishchevoy promyshlennosti,
kafedra organicheskoy khimii.
(Oils and fats) (Sorghum)

ANDREYEVA, A.L.

Sorghum oil and the possibility of its use as edible product.
Trudy MTIPP no. 20:6-8 '63. (MIRA 17:4)

ANDREYEV, A.M.

V.A. Suchkov team work experience in Zyryanovski mines. Biul. TSIIN
tsvet. met. no.9:7 '58. (MIRA 11:6)

(Zyryanovski--Boring)

ANDREYEVA, A.M.

Monthly advance of 213 running meters by one single face. Biul.
TSIIN tsvet. met. no.9:8-9 '58. (MIRA 11:6)
(Mining engineering)

S/169/63/000/001/017/062
D263/D307

AUTHORS: Andreyeva, A.N., Karmanov, V.G. and Ryabova, Ye.P.

TITLE: A semiconductor bolometric radiant energy receiver for phytophysiological and microclimatic investigations

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1963, 6, abstract 1346 (Sb. tr. po agron. fiz., 1962, no. 9, 162-170)

TEXT: Construction of the bolometer is described. The receiving semiconducting layer is $6 - 8 \text{ mm}^2$ in area and $\sim 10 \mu$ thick. Its resistance is $20 - 50 \text{ k}\Omega$ at 20°C , with a temperature coefficient of 3.5% per degree at 20°C , and a power dissipation of $200 - 300 \mu\text{v}$ per degree. Paired blocks of the bolometer are blackened and are placed in an internally blackened box, covered with flucrite filters. The device is 10 mm high and 11 mm in diameter and possesses a 20 mm tubular handle. The bolometer is connected into a bridge with a supply of 3 - 7 v. Sensitivity of the receiver is such as to allow

Card 1/2

A semiconductor ...

S/169/63/000/001/017/062
D263/D307

operation with light intensities varying from direct solar illumination to e.g. 0.01% of that value (from 1.1 to 0.0001 volt.cm⁻²). The disadvantage of the bolometer is the nonlinearity of response when the film is heated, and a dependence of response on the bridge voltage. The following points are considered: measurement of the radiation balance components of leaves of vegetation, measurement of the intensity of monochromator light beams, measurement of the indicatrix of dispersed light, study of the radiational field of light installations, determination of the relative emissive characteristics of various bodies and the determination of the rate of drying of the ground and of leaves.

[Abstracter's note: Complete translation]

Card 2/2

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; PAVLOV, N.N.; ANDREYEVA, A.N.

Effect of ultrasonic waves on the crystallization and physical
properties of alloys. Trudy LPI no.222:8-14 '63. (MIRA 16:7)
(Alloys--Metallography) (Crystallization)
(Ultrasonic waves--Industrial applications)

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; PAVLOV, N.N.; ANDREYEVA, A.N.

Effect of vibration on the crystallization of thermoelectric alloys.
Trudy LPI no.222:15-19 '63. (MIRA 16:7)
(Alloys--Thermoelectric properties) (Crystallization)